

## THREE NEW ANOPLURA FROM AFRICAN RODENTS

(ANOPLURA: HOPLOPLEURIDAE)

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The three new anopluran species described in this paper represent two common rodent-infesting genera, *Hoplopleura* and *Polyplax*. As well as the new species, the previously unknown male of *Polyplax paradoxa* Johnson is described and illustrated, and notes are included on *Polyplax meridionalis* Johnson.

***Hoplopleura dendromuris*, new species**

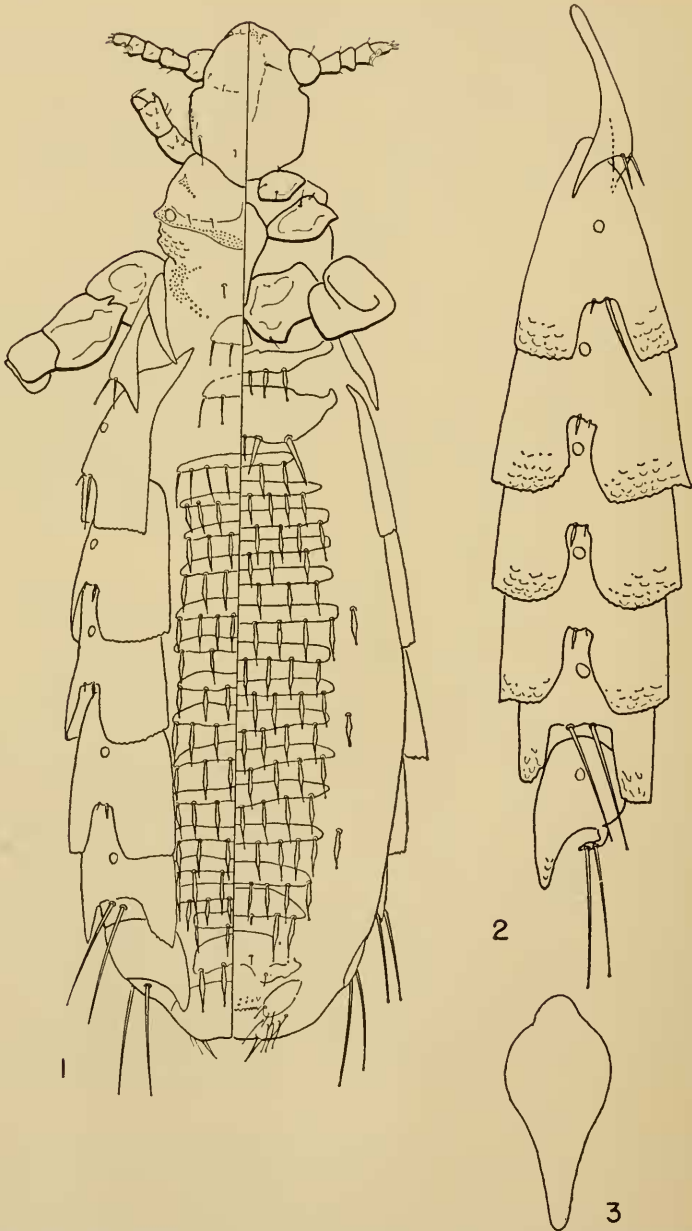
(Figs. 1-3)

*Hoplopleura intermedia*, Ferris, 1921, Contributions toward a monograph of the sucking lice, pt. 2:91 (*partim*, records from *Dendromus*). Hopkins, 1949, Proc. Zool. Soc. London, 119(2): 484 (records from *Dendromus*). Ferris, 1951, The sucking lice, p. 137 (*partim*, records from *Dendromus*).

*Type Data*.—Female holotype, two female paratypes from *Dendromus mesomelius insignis*, U. S. N. M. mammal no. 184091 (*Dendromus insignis*), Kaimosi, British East Africa (Kenya). Holotype and one paratype deposited in the collections of the Stanford University Natural History Museum. One paratype deposited in the collections of the U. S. National Museum.

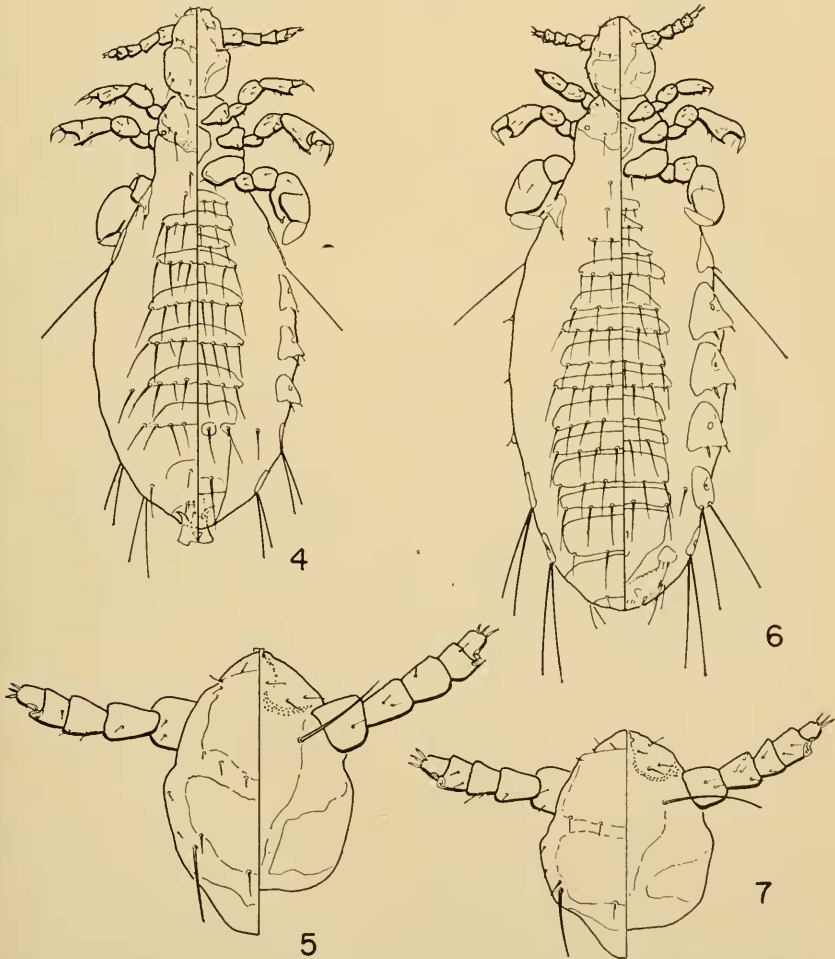
*Diagnosis*.—*H. dendromuris*, n. sp., like *H. patersoni* Johnson and *H. laticeps* Ferris, forms a connecting link between the *hesperomydis-affinis* group of *Hoplopleura* and the *enormis* group. Like the *enormis* group, *dendromuris* has only very small setae on the thoracic dorsum, but there is no tendency toward subdivision of the apical lobes of the paratergal plates and the thoracic sternal plate is not short and broad. *H. dendromuris*, n. sp., is like members of the *hesperomydis-affinis* group in shape of the thoracic sternal plate and paratergal plates, but differs in having only small setae on the thoracic dorsum. It may be immediately separated from the African members of the *hesperomydis-affinis* group (*intermedia* K. & F., *zelotomydis* Johnson, *inexpecta* Johnson, and *captiosa* Johnson) by lacking large, long setae on the thoracic dorsum, as well as by differences in form and chaetotaxy of the paratergal plates, and type and numbers of setae in the tergal and sternal abdominal rows. Among other differences, *dendromuris* is separable from *laticeps* Ferris by not having the apical lobes of paratergal plates III-VII deeply subdivided, and from *patersoni* Johnson in that *dendromuris* has two apical lobes on plate VII and one on plate VIII.

*Description*.—*Female* (fig. 1): *Head* less than twice as long as broad, not patterned or rugose dorsally. Lateral postantennal margins straight and parallel. Thorax faintly rugose laterally below spiracles. Mesothorax with two small setae dorsally on either side. Thoracic sternal plate (fig. 3) with posterior half narrowly elongate, posterior apex rounded, width at broadest point (measured in horizontal plane of body) less than half total length. *Legs* as in genus. Parts of some legs



*Hoplopleura dendromuris*, n. sp., female holotype. Fig. 1, female; fig. 2, paratergal plates; fig. 3, thoracic sternal plate.

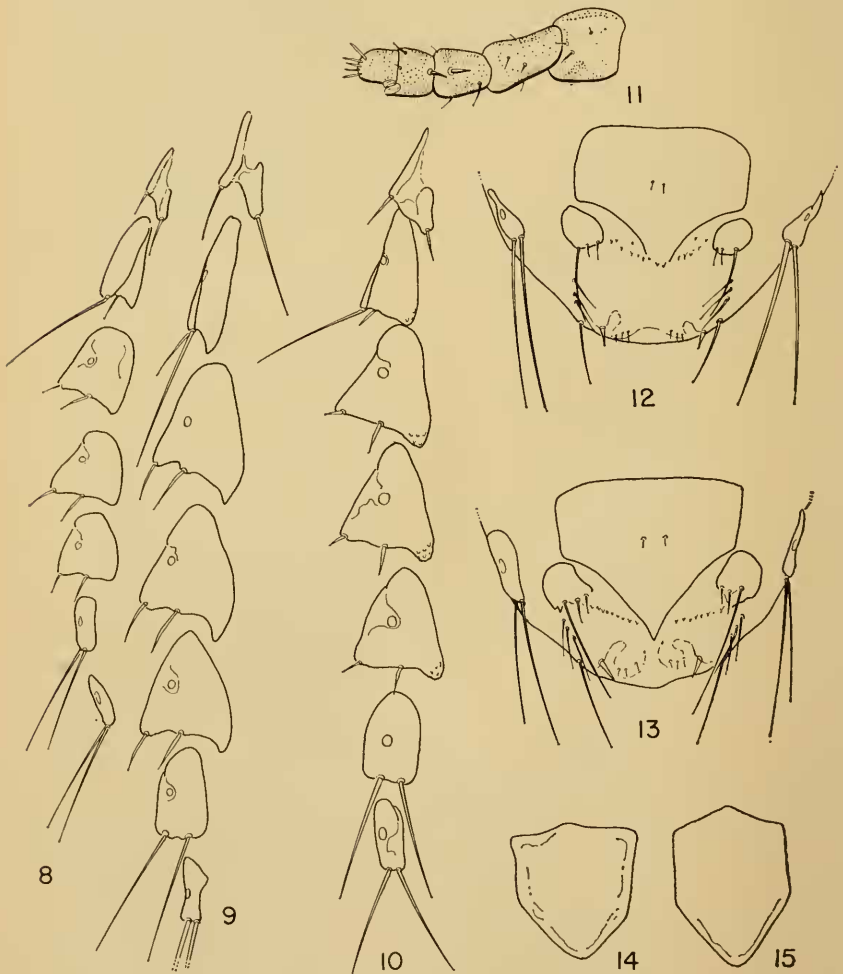
missing in holotype. *Abdomen.* With 16 sternal and 17 tergal plates which bear large setae on posterior margins. Typical plates with setae stout, sword-shaped. No setae off plates dorsally. Ventrally, 3 setae off plates on either side in holotype, 4 in paratypes. Paratergal plates (fig. 2) with apical lobes slightly scaly; seta-bearing portion of plate II with apical angles acute but not elongate, pair of apical setae not extending to apices of lobes: plate III with lobes rectangulate, one long apical seta reaching beyond apices of lobes; other seta very small; plates IV-VI with rectangulate, subequal, apical lobes, pairs of apical setae on each plate small, one of these setae stout, other hairlike; plate VII with narrow, truncate apical lobes and two long apical setae; plate VIII with one narrow,



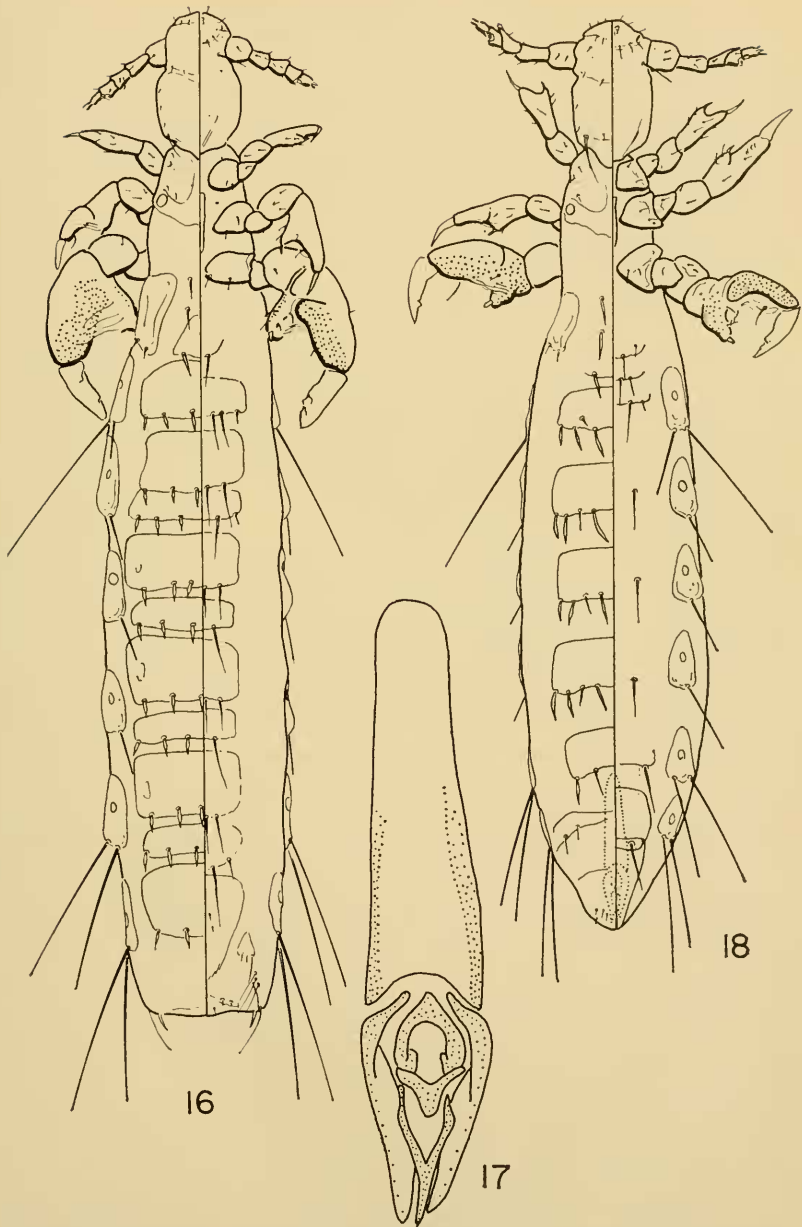
*Polyplax paradoxa* Johnson. Fig. 4, male; fig. 5, head, female. *Polyplax solivaga*, n. sp, female holotype. Fig. 6, female; fig. 7, head.

rounded dorsal apical lobe which is less than half as long as entire plate, including lobe, with two long apical setae. *Genitalia* not distinctive. *Male* unknown.

*Length*.—1.0 mm.



*Polyptax paradoxa* Johnson. Fig. 8, paratergal plates II-VIII, male; fig. 9, same, female; fig. 11, dorsum of antenna, male; fig. 12, genitalia, female; fig. 15, thoracic sternal plate, female. *Polyptax solivaga*, n. sp. Fig. 10, paratergal plates II-VIII, paratype; fig. 13, genitalia, holotype; fig. 14, thoracic sternal plate, holotype.



*Polyplax dolichura*, n. sp. Fig. 16, female holotype; fig. 17, aedeagus, allotype; fig. 18, male allotype.

***Polyplax solivaga*, new species**

(Figs. 6, 7, 10, 13, 14)

*Type Data*.—Female holotype, 3 female paratypes from *Rattus chrysophilus* (*Aethomys chrysophilus*), Nwambia Pan, Kruger National Park, Transvaal, 3 August 1959, no. KW-45.

Holotype and one paratype deposited in the collections of the South African Institute for Medical Research. Two paratypes deposited in the collections of the U. S. National Museum.

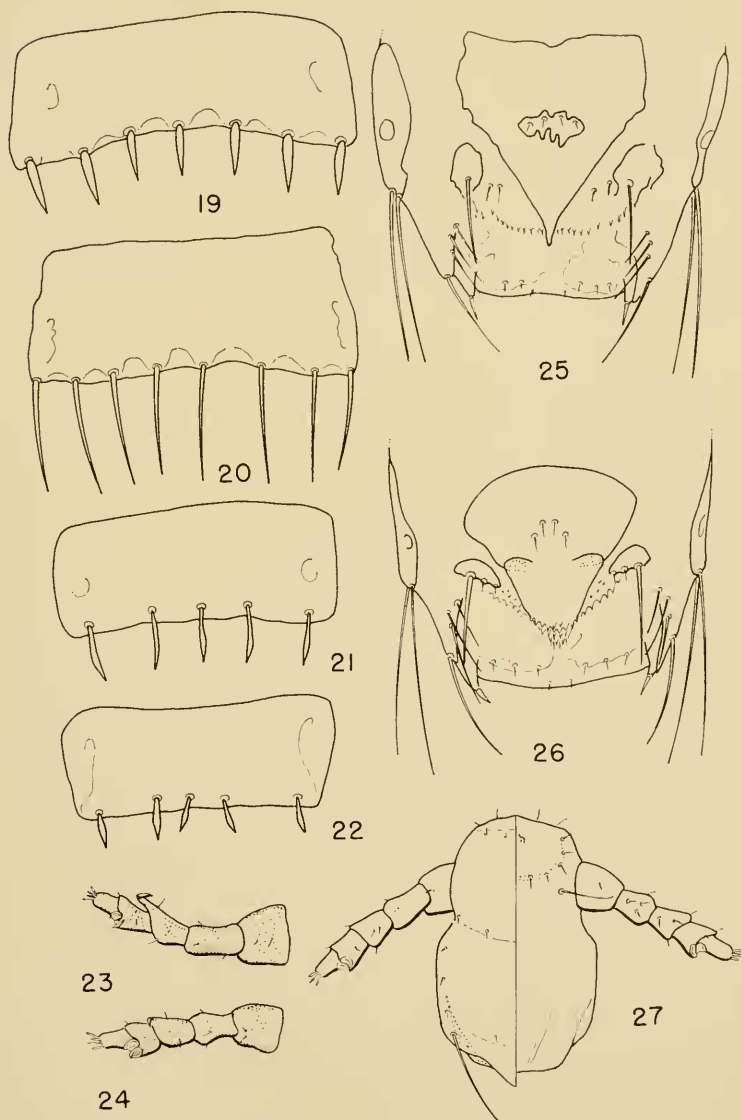
*Diagnosis*.—A member of the *otomydis* group. Separable in the female from *otomydis* Ferris, *vacillata* Johnson, and *myotomydis* Johnson, in that both the apical setae of paratergal plates IV-VI are much less than half the length of the corresponding plate. Different from *caluri* Johnson in having four marginal setae on the last dorsal abdominal plate. Separated from *cummingsi* Ferris in that the second ventral abdominal plate has only two large setae, and because the sternal and abdominal plates of the abdomen are normal, not reduced. Different from *asiatica* Ferris in that abdominal plates are present. *P. solivaga*, n. sp. is most closely allied to *P. paradoxa* Johnson. It may be separated from *paradoxa* in the female by the following: In *solivaga* the setae on paratergal plates IV-VI are all less than one-third the length of the corresponding plate and the apical lobe is broader and rounder (compare figs. 9 and 10); the thoracic sternal plate is broader and shorter (compare figs. 14 and 15); and the head is also broader and shorter (compare figs. 5 and 7). The genitalia are similar in the two species but *solivaga* has the posterior apex of the genital plate acute (compare figs. 12 and 13).

The female *paradoxa* drawn for comparison with *solivaga*, n. sp., is from *Meriones* sp., 50 mi. E. of Cairo, East Desert Governorate, Egypt, 10 Dec. 1959, IHH 12436.

*Description*.—*Female* (fig. 6): *Head* (fig. 7) little longer than broad, lacking distinct postantennal angles and occipital angles. Setae on gular plate (ventrally) extending beyond base of second antennal segment. *Thorax* with thoracic sternal plate (fig. 14) almost as broad as long. *Legs* typical of genus. *Abdomen* with tergal and sternal plates normal, not strongly reduced. Second sternal plate with two long posteromarginal setae flanked by one minute seta on either side; last tergal plate with four posteromarginal setae. Paratergal plate II with the two apical setae short, no more than half length of plate; plate III with one apical seta longer than plate, other short and stout, with one rounded, slightly scaly apical lobe; plates IV-VI with single, scaly, rounded, apical lobe, apical setae less than one-third length of plate bearing them, setae stout, of approximately equal size; plates VII-VIII lacking apical angles, with usual long apical setae. *Genitalia* (fig. 13) with apex of genital plate sharply triangulate. *Male* unknown.

*Length*.—Holotype: 1.1 mm.; paratypes: 1.2 mm.

Ferris (1923) and Bedford (1929) recorded *P. cumminasi* Ferris from *Aethomys chrysophilus* in Zululand and Eastern Transvaal. Johnson (1960) said that the specimens from *Aethomys* might be found to constitute a new species. I have since examined Ferris's



*Polyplax meridionalis* Johnson, female. Fig. 19, first dorsal plate of sixth abdominal segment; fig. 26, genitalia. *Polyplax oxyrrhyncha* Cummings, female. Fig. 20, first dorsal plate of sixth abdominal segment; fig. 25, genitalia. *Polyplax brachyrrhyncha* Cummings. Fig. 21, first dorsal plate of sixth abdominal segment, female; fig. 24, dorsum of antenna, male. *Polyplax dotichura*; n. sp. Fig. 22, first dorsal plate of sixth abdominal segment, female holotype; fig. 23, dorsum of antenna, male allotype; fig. 27, head, female holotype.



specimens which are supposedly from *A. chrysophilus*, Mfongosi, Zululand (from the Durban Museum), and they appear to be *cummingsi*. Since *cummingsi* and *solivaga* are closely related species, it seems unlikely that the two louse species would share a single host, nor is a joint occurrence on *Aethomys* explainable on geographical grounds. As well, *cummingsi* apparently occurs on species of *Dasymys*, and its normal occurrence on *Aethomys* would be unexpected. Since the data are incorrect on others of the Anoplura Ferris received from the Durban Museum (which I have examined), mislabelling or wrong host identification on the part of the Mfongosi *cummingsi* specimens is possible. Bedford's examples of "*cummingsi*" from Eastern Transvaal may be *solivaga*, n. sp.

***Polyplax paradoxa* Johnson**  
(Figs. 4, 5, 8, 9, 11, 12, 15)

*Polyplax paradoxa* Johnson, 1960, U. S. Dept. Agri. Tech. Bull. no 1211:72.

The description of *paradoxa* was based on the female holotype from *Meriones* sp. and 16 female paratypes from various species of *Meriones* taken in Egypt and Israel. The male was not described. Fortunately, one male of *paradoxa* and several associated females were included in Egyptian material collected during 1959 by Dr. Harry Hoogstraal and his associates of NAMRU-3, Cairo. Collection data are: from *Meriones* sp., 50 mi. E. of Cairo, East Desert Governorate, Egypt, 10 Dec. 1959, HH 12436.

*Diagnosis and Description of Male* (fig. 4).—Similar to the female except in details of the genitalia and antennae. Paratergal plate setae (fig. 8) are like those of the female but the apical lobes of plates III-VI are not so pronounced. The aedeagus is extended in the only male available and thus cannot be described. *P. paradoxa* is separable in the male from other members of the *otomydis* group for which males are known in one or more of the following: The basal segment of the antenna is not at all enlarged, nor the third and fourth antennal segments modified, though each of these segments bears the usual enlarged seta (fig. 11); the tergal and sternal abdominal plates are normal, not reduced; the thoracic sternal plate lacks an anterior prolongation.

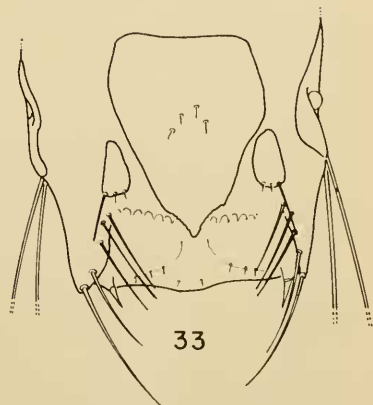
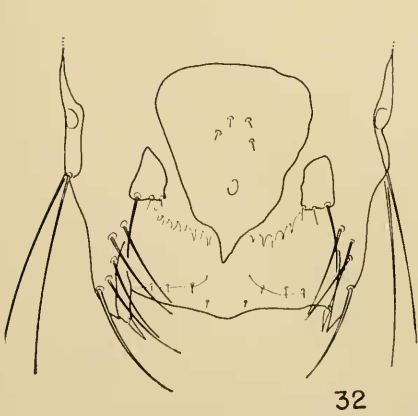
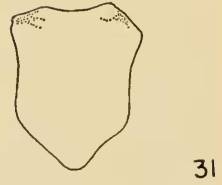
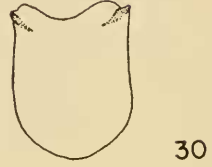
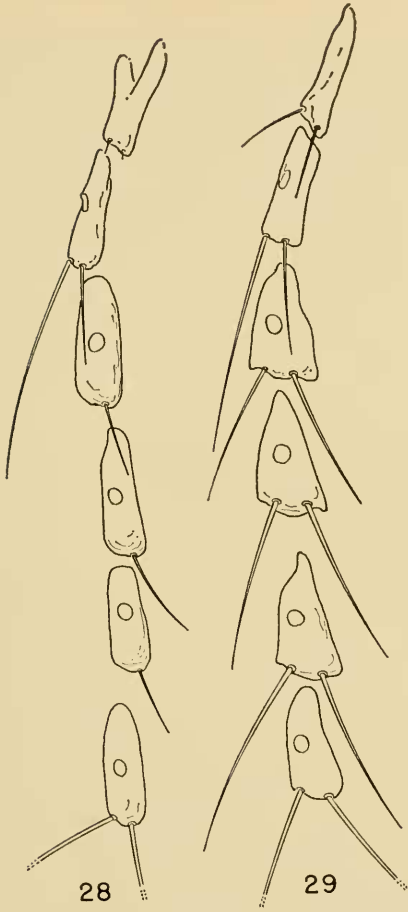
*Length*.—Male: 1.0 mm.

***Polyplax dolichura*, new species**  
(Figs. 16-18, 22, 23, 27, 28, 33)

*Type Data*.—Female holotype, male allotype, one male, one female, paratypes from *Acomys albigena*, Yabous, Blue Nile Province, Sudan, 22 April 1960, Hoogstraal, Heyneman, and Gaber collectors. Holotype deposited in the collections of the United States National Museum.

*Polyplax dolichura*, n. sp., female holotype. Fig. 28, paratergal plates II-VII; fig. 33, genitalia. *Polyplax brachyrrhyncha* Cummings, female. Fig. 29, paratergal plates II-VII; fig. 32, genitalia. *Polyplax meridionalis* Johnson, female. Fig. 30, thoracic sternal plate. *Polyplax oxyrrhyncha* Cummings, female. Fig. 31, thoracic sternal plate.





*Diagnosis.*—Closely allied to *Polyplax brachyrrhyncha* Cummings, with male and female genitalia and head shape much the same in the two species. *P. dolichura*, n. sp., is immediately separable from *brachyrrhyncha* in both male and female in that paratergal plates IV-VI have only one apical seta (compare figs. 28 and 29). Female *dolichura* is further separable in that the setae on the dorsal abdominal plates are very short (compare figs. 21 and 22). In the male *dolichura* differs from *brachyrrhyncha* in that the third segment of the antenna has its distal prolongation more pronounced (compare figs. 23 and 24).

The specimens of *brachyrrhyncha* drawn for comparison with *dolichura*, n. sp., were from *Acomys albigena*, Paloich, Khor Adar, Upper Nile Province, Sudan, 14 April 1960, Hoogstraal et. al. collectors.

*Description.*—*Female* (fig. 16): *Head* (fig. 27) broadly rounded just before antennae, postantennal angles rounded, postantennal margins parallel, occipital angles slight. *Thorax* longer than broad, thoracic sternal plate narrow, poorly sclerotized. *Legs.* Tibiotarsal segment of third leg enlarged and heavily sclerotized, with corresponding large, rugose claw. *Abdomen* long and slender, sternal and tergal plates present on all segments though faintly sclerotized, especially on venter. Setation as in figure, setae on tergal plates very short, slightly inflated medially, apically acute, none of them as long as length (measured in longitudinal plane of body) of the narrower tergal plate on each typical segment (fig. 22). Setae on sternal plates normal, not especially thick or short. Paratergal plates (fig. 28) lacking free apical angles, plate II with two small apical setae; plate III with one long seta and one seta shorter than plate; plates IV-VI each with single apical seta which is no longer than plate bearing it; plates VII-VIII with usual pair of long apical setae. *Genitalia* (fig. 33) with genital plate roughly triangular; lateral setigerous lobes of eighth segment longest in an anterior-posterior direction, narrowest anteriorly, bearing one long and two short setae on posterior margin.

*Male* (fig. 18): *Head* as in female except for antennae (fig. 23); third antennal segment strongly modified, anterodistal angle produced into long narrow process which bears apical, enlarged, posterodorsally-directed seta. *Thorax* and *legs* as female. *Abdomen* with setation as in figure, segment 2 with one faint sternal plate, segment 3 with two faint sternal plates, segments 4-6 lacking plates, segment 7 with faint plate, genital plate present but faint. Paratergal plates as in female. *Aedeagus* (fig. 17) with long apically converging parameres which enclose apically acute, narrowly triangular pseudopenis.

*Length.*—Female holotype: 1.8 mm.; paratype: 2.0 mm.; male allotype: 1.5 mm.; paratype: 1.8 mm.

***Polyplax meridionalis* Johnson**

(Figs. 19, 26, 30)

*Polyplax meridionalis* Johnson, 1962, Proc. Ent. Soc. Wash. 64(1): 51, figs. 1-3, 5, 7.

The male holotype and female allotype of *meridionalis* Johnson were taken from *Acomys cahirinus*, Bechuanaland Protectorate. Since its

description I have seen two females and one male nymph from *A. cahirinus*, Blantyre, Nyasaland, which are probably *meridionalis*. These specimens were lent to me through the courtesy of Dr. T. Clay of British Museum (Natural History). In most ways these specimens are like the type series but the thoracic sternal plate (fig. 30) is different, being rounded posteriorly rather than angled and thus quite different from the thoracic sternal plate of *P. oxyrrhyncha* Cumings (fig. 31). Other differences from *oxyrrhyncha* (also exhibited by the allotype of *meridionalis*) are found in the female genital segments. In *meridionalis* the genital plate is convex anteriorly and the lateral setigerous lobes of the eighth segment are longest in the horizontal axis of the body (compare figs. 26 and 25). For greater ease in identification of *oxyrrhyncha* and *meridionalis*, I have included comparative drawings of a typical dorsal abdominal plate for each species (figs. 19 and 20).

The specimen of *P. oxyrrhyncha* drawn for comparison with *meridionalis* is from *Acomys dimidiatus*, St. Catherine's Monastery, Sinai, Egypt, 14 May 1953, HH 9354-56.

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#### ROBERT EVANS SNODGRASS

July 5, 1875—September 4, 1962

Dr. Robert E. Snodgrass, the dean of American insect morphology and Honorary President of this Society, passed away quietly in his sleep on September 4, 1962. A forthcoming issue of the Proceedings will be devoted to his memory.